

Name of the Student: _____

Max. Marks : 18 Marks

Time : 18 Minutes

Mark Schemes

Q1.

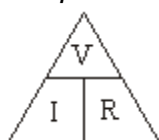
- (a) (i) $A_1 = 0.5$
ignore any units 1

$A_4 = 0.5$
allow 1 mark for $A_1 = A_4 \neq 0.5$ 1

- (ii) the resistance of **P** is more than 20Ω 1

a smaller current goes through P / A_2 (than 20Ω)
dependent on getting 1st mark correct
accept converse 1

- (b) (i) potential difference = current \times resistance
accept pd / voltage for potential difference
accept $V = I \times R$, correct symbols and correct case only
accept volts = amps \times ohms
accept

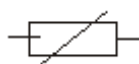


provided subsequent method is correct
allow combination of
physical quantities and named units
allow voltage = $I \times R$ 1

- (ii) 6
allow 1 mark for correct substitution 2

- (iii) 6
accept their (b)(ii) 1

- (c) thermistor or



accept correct circuit symbol
allow phonetic spelling

1

resistance goes down (as temperature of thermistor goes up)

do **not** accept changes for goes down

do **not** accept an answer in terms of current only

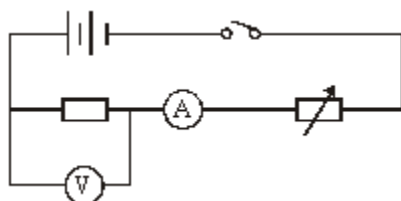
answers in terms of other components are incorrect

1

[10]

Q2.

(a) all symbols correct



accept push switch symbol switch may be open or closed
any lines through symbols = 0 marks

1

correct circuit drawn

polarity of cells not relevant provided they are joined correctly

1

voltmeter must be across resistor only

two cells are required in the diagram

ignore the order of the components

allow small gaps in circuit

omission of any component = 0 marks

1

(b) (i) potential difference = current \times resistance

accept voltage or p.d. for potential difference

accept $V = I \times R$



accept provided I R subsequent use correct

do **not** accept C for current

1

(ii) 2

allow 1 mark for correct substitution

wrong working loses both marks

2

(iii) straight line drawn through the origin

judge by eye

straight line passes through $I = 0.4$, $V =$ their (b)(ii) / 2 **and** 0.0

this mark may be awarded if all points shown including these points are correct even if no line is drawn

N.B. a curve scores 0 marks

1

(c) temperature increases

*accept filament lamp / it gets hotter
allow heat for temperature*

1

[8]